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A Remarkable New Genus of Travuniidae (Phalangida) from Japan

With 4 Text-figures

Seisho SUZUKI

Zoological Laboratory, Faculty of Science, Hiroshima University
(Communicated by K. TAKEWAKI)

Subord. Gonyleptomorphi Šilhavý
Superfam. Travunoidea Kratochvíl
Fam. Travuniidae Absolon et Kratochvíl
Yuria n. gen.

Abdominal scutum with five areas, scutum and free tergites unarmed. Eye tubercle broadly oval, unarmed, with black eyes. Stigma clearly visible. Chelicera normal. Palpus well developed, strongly armed with spines. Legs unarmed; calcaneus of all legs much shorter than astragalus. Number of tarsal segments: I 4, II 5, III 4, IV 4. Distitarsi I and II have two and three segments respectively. Tarsi III and IV have a peltonychium.

Type-species: Yuria pulcra n. sp.

Notes: The new genus differs by having a different number of tarsal segments in four legs from all other genera of this family. The generic name is dedicated to the late my wife who helped me for many years in carrying out the arachnological works.

Yuria pulcra n. sp.¹⁾ (Figs. 1–4)

Male. —Scutum 0.88 mm long and 0.90 mm wide at widest portion. Total body length 1.08 mm.

Length of legs (in mm):

	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg I	0.15	0.58	0.24	0.40	0.41	0.37	2.15
Leg II	0.16	0.72	0.29	0.65	0.58	0.64	3.04
Leg III	0.15	0.53	0.24	0.47	0.54	0.37	2.30
Leg IV	0.16	0.74	0.30	0.66	0.79	0.44	3.09

1) The specific name is a Latin adjective meaning beautiful or lovely.

Body very small, short oval, rounded. Frontal margin of carapace is provided with three pointed tooth-like protuberances protruding above the attachments of chelicerae (Fig. 2A). Lateral margin of scutum lightly constricted along the third coxa. Scutal groove indistinct, the fifth tergal groove shallow, each tergal

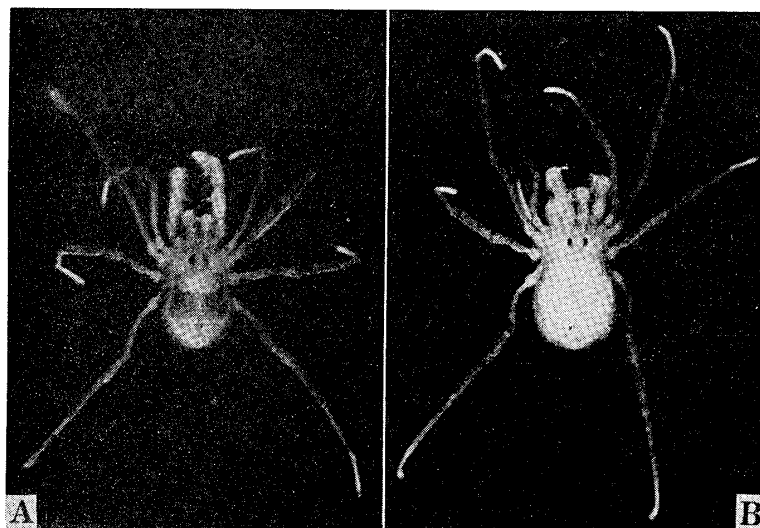


Fig. 1. *Yuria pulcra* n. sp. Dorsal views, $\times 10$, A. male and B. female.

area is distinguished by only slight elevation. Carapace, scutal region and free tergites are covered thickly with very fine granules, unarmed except for a transverse row of obsolete microscopic hairs on each of tergal areas and free tergites. Eye tubercle is separated from the frontal margin by a slight distance; 0.22 mm long and 0.14 mm wide; the surface finely granular, rounded above, unarmed, with pigmented eyes.

Ventral surface of coxae I-IV (Fig. 3D) finely granular and clothed with a few scattered hairs. Coxa I has a row of spinous hairs along the anterior surface. Coxa II is provided with two to three blunt tubercles on the retro-lateral margin; coxa III with one or two tubercles in front of the distal portion and a row of four to six tubercles on the posterior margin; and coxa IV two or three tubercles on the retro-lateral margin above spiracle. Genital operculum rounded with truncated basal margin, the surface finely granular and with scattered hairs. Sternum wedge-shaped. Gnathocoxa of the second coxa is

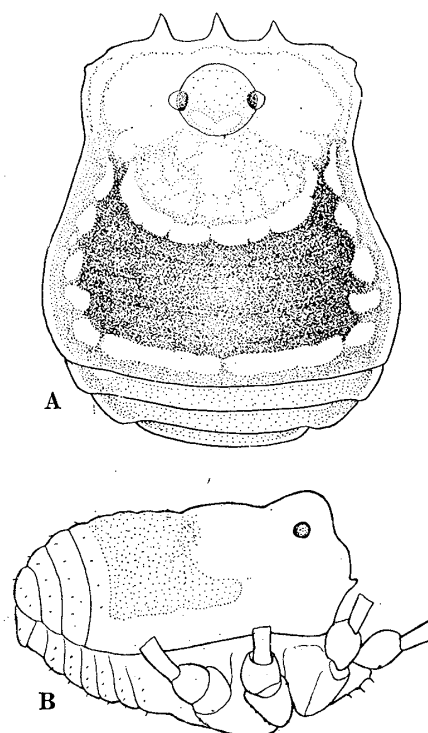


Fig. 2. *Yuria pulcra* n. sp. A. Dorsal view of male, $\times 41$ and B. lateral view of male, $\times 37$.

as shown in Figure 3D. Stigma not concealed, clearly visible. Each sternite is furnished with a transverse row of obsolete hairs.

Chelicera (Fig. 3A-C): Proximal segment 0.34 mm long and 0.19 mm wide; distal segment 0.49 mm long and 0.21 mm wide. Proximal segment is provided with a dorsal protuberance, unarmed except for a few obsolete granules on the mid-dorsal surface and two minute spinose tubercles near the apex, one of which is pro-lateral, the other retro-lateral. The distal segment is distended and furnished in front with several setiform hairs, which increase in length distally, and a transverse row of five hair-tipped granules which arranged closely to each

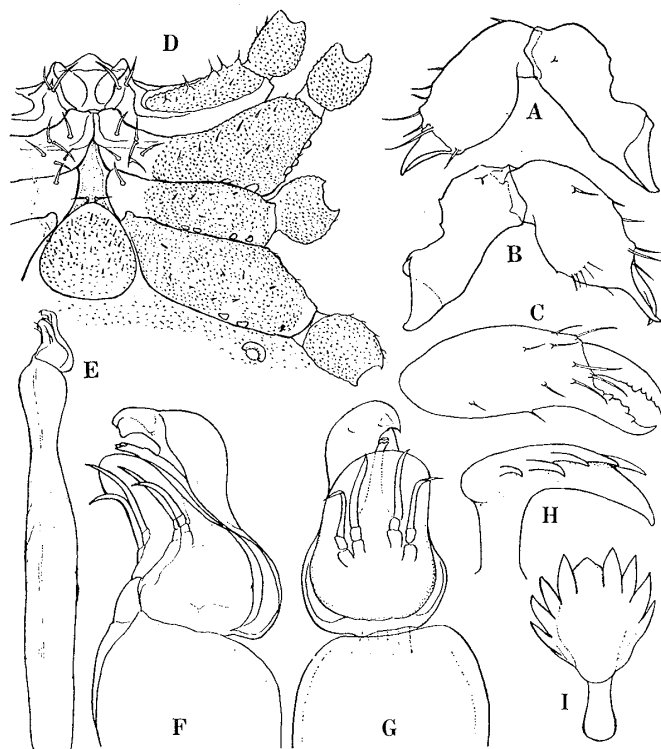


Fig. 3. *Yuria pulchra* n. sp. A-B. Male left chelicerae, $\times 46$, A. lateral and B. medial. C. Distal segment of male left chelicera, above, $\times 53$. D. Genital region with I-IV coxae, genital operculum and sternum, $\times 53$. E. Ventro-lateral view of penis, $\times 67$. F. Ventro-lateral and G. ventral view of glans penis, $\times 255$. H-I. Tarsal claws of male fourth leg, H. lateral and I. above, $\times 360$.

other in front of the middle of the medial surface (Fig. 3B). Chelae furnished with about five small teeth on the blade of fixed finger and six to seven teeth on that of the movable finger.

Palpus (Fig. 4): Trochanter 0.20 mm long, 0.19 mm wide; femur 0.36 L, 0.26 W; patella 0.30 L, 0.22 W; tibia 0.36 L, 0.28 W; tarsus 0.30 L, 0.30 W. Total length 1.52 mm. Claw 0.20 mm long. Palpus well developed, longer than body and strongly armed with spines. All sorts of spines as shown in Figure 4E-I are present in a single segment. Coxa armed below with two small tubercles. Trochanter rounded, short-stalked, the ventral surface provided with a short

conical medial spine and a smaller one at the apex. One or two obsolete granules are also present in the proximal half. The dorsal surface unarmed or with a small conical tubercle. Femur large and swollen, viewed from the lateral, dorsal margin strongly arched, but ventral margin nearly straight. Dorsal surface has a median row of four to five spinose granules. Ventral surface armed with a large proximal spine. Two spines are present on the retro-ventral margin, one of which being situated near the middle, larger, the other near the apex, conical, with no terminal seta. A long spine is also present on the medial surface



Fig. 4. *Yuria pulchra* n. sp. A-B. Male palpi, A. lateral and B. below, $\times 46$. C-D. Female palpi, C. lateral and D. medial, $\times 46$. E-I. Different armaments of palpus, $\times 250$: E. strong spine (Dorn); F. short spinose tubercle; G. short (right), medial (median) and long (left) setae or spines; H. spinose granule; I. long setiform hair.

near the apex. Patella widened distally. The pro-lateral surface has two spines on the distal portion (Fig. 4B), a larger one situated in the lower position, in addition one or two setigerous granules on the dorsal surface. Tibia and tarsus flattened beneath. Tibia widened, proximal portion especially large, armed with a retro-lateral row of four spines, the first three of which abruptly increase in length, the third spine is extraordinarily long and robust and bears a very long seta on the subdistal surface, the fourth spine is very small. On the pro-lateral side there are three spines, which increase in size distally. Tarsus conspicuously widened, the median portion extremely enlarged so that in the lateral view the

segment is seen as a regular triangle-shape (Fig. 4A). The retro-lateral margin is furnished with a row of seven to eight spines: two strong setae (three on one palpus) and one conical spine in the proximal half, two strong spines, one short spine and one seta in the distal half. On the pro-lateral side there is a row of five spines, the second and third being larger than the others. A long setiform hair is also present alternately with a long spine on each side of the ventral surface. The claw is much shorter than the tarsus.

Legs: Relatively short, all segments unarmed. Trochanter finely granular, stalked, rounded. Fourth coxa curved S-shape. Calcaneus of all metatarsi much shorter than astragalus. The number of tarsal segment: I 4, II 5, III 4, IV 4. Distitarsus of first tarsus with two segments: second tarsus with three segments. Third and fourth tarsi have a stalked peltonychium at terminal end. The main body of the claw is shield-shaped, the distal portion being pointed and curved below, four spikes present on each side, which increase in length distally, but never extend to the tip of the main body (Fig. 3H-I).

Penis (Fig. 3E-G): Corpus penis 0.70 mm long and 0.08 mm wide near the middle. Corpus penis tape-form, rounded distally, constricted at subdistal portion. In front of the corpus penis a spoon-like glans penis protrudes. The ventral plate entirely rounded, with two pairs of long setae near the middle on each side. The two setae arranged closely, but the exterior one curved acutely outward near the distal portion. Aedeagus relatively short, not extending to the apex of the ventral plate, and terminating bluntly. Dorsal plate as shown in Fig. 3F-G, the distal portion hanging over the aedeagus in the form of a hood.

Color: Dorsum of the body a beautiful reddish yellow, with faint brown reticulate markings on the eye tubercle and posterior portion of carapace. First to fourth tergal areas dark brown. A series of large yellowish spots is present along the lateral margin of tergal areas, a transverse row of similar spots is also on the anterior margin of the first tergal area and on the posterior margin of the scutum. Venter concolorous with dorsum. Chelicera and palpus reddish yellow. Legs mainly reddish to brownish yellow except tarsal segments which are greyish; femora with a pale greyish caput. In some specimens entire body including appendages pale yellow to yellowish with no dark markings on the tergal region.

Female.—Scutum 0.98 mm long and 1.02 mm wide at widest portion. Total body length 1.23 mm.

Length of legs (in mm):

	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg I	0.15	0.50	0.25	0.44	0.38	0.35	2.07
Leg II	0.16	0.70	0.28	0.64	0.60	0.64	3.02
Leg III	0.15	0.47	0.25	0.49	0.51	0.35	2.22
Leg IV	0.17	0.67	0.26	0.65	0.80	0.46	3.01

Chelicera: Proximal segment 0.34 mm long, 0.19 mm wide; distal segment 0.52 mm long, 0.20 mm wide.

Palpus: Trochanter 0.20 mm long, 0.18 mm wide; femur 0.36 L, 0.19 W;

patella 0.27 L, 0.18 W; tibia 0.29 L, 0.22 W; tarsus 0.32 L, 0.23 W. Total length 1.44 mm. Claw 0.17 mm long.

The female closely resembles the male in coloration and general appearance. The body larger than that of the male. The palpus is less robust than in the male, and the tarsus is not so extremely widened but of rather low triangle-shape in the profile as shown in Figure 4C-D. This is one of the most useful characters to distinguish sexes.

Types: Holotype male, Mt. Hikosan (1199.6 m in altitude), Fukuoka Pref., Aug. 26, 1963 (S. Suzuki); Paratypes 9 ♂, 4 ♀, 16 immature, the same locality as holotype, Aug. 1-2, 1959 (Chiyoko Okuma and S. Suzuki); 1 ♂, 7 ♀, 2 immature, the same collection data as holotype.

Types are deposited in the Zoological Laboratory of Hiroshima University.

Habitat: The specimens were found at various points on the mountain between 700 and 1199 m in altitude. The animals usually inhabit fallen leaves and beneath decayed wood.

Variation: In the Travuniidae the arrangement of the tarsal segments in the four legs is the most important character to classify the genera. Eleven males and eleven females were examined. The number of tarsal segments is extremely constant, and it is always I 4, II 5, III 4, IV 4. The number of distitarsi is also remarkably constant. The distitarsi I and II examined have two and three segments respectively without exception.

Notes: The Travuniidae is a small but very interesting family and it was known to occur only in Europe; the main distribution center is Dalmatian districts, Southeastern Alps and Pyrenees. In Japan one member, *Peltonychia japonica* Miyosi was first recorded from Shikoku in 1957. The present material is the second record for Japan. From the author's collection data, *P. japonica* is widely distributed through Shikoku, Kyushu, Yakushima and western part of Hondo, but *Yuria pulcra* seems to have a rather restricted distribution and Hikosan is the only known locality at the present time.

According to Roewer (1935), almost all members of the European travuniids are known from caves, but by a recent report of Kraus (1961) some of them are found outside caves. The two Japanese travuniids also occur in usual habitats of forests.

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